

U.S.S.N. 09/235,875
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AMENDMENT AND RESPONSE TO OFFICE ACTION

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coli having at least one bacterial transgene encoding [an enzyme selected from the group consisting of] a PHA polymerase incorporating C₆ substrates [integrated into the genome] and at least one [a D-specific enoyl-CoA hydratase] enzyme selected from the group consisting of a phbA thiolase gene encoding an enzyme that converts butyryl-CoA and acetyl CoA to beta-ketohexanoyl-CoA, a phbB reductase gene that encodes an enzyme that converts beta-ketohexanoyl-CoA to beta-hydroxyhexanoyl-CoA, a phbC polymerase gene that encodes an enzyme that polymerizes 3-hydroxybutyryl CoA, a D-specific enoyl-CoA hydratase and β-hydroxyacyl-ACP-coenzymeA transferase, and providing feedstocks for the transgenic *E. coli* [integrated into the chromosome], wherein the production of polyhydroxybutyrate-co-[polyhydroxyvalerate] polyhydroxyhexanoate [containing 3-hydroxyhexanoate] by the transgenic [organism] *E. coli* occurs.

Please cancel claims 2-5.

6. (Twice Amended) The method of claim 1 wherein the phbC polymerase gene [encodes] encoding a PHA polymerase enzyme that incorporates C₆ substrates is incorporated into the bacterial chromosome.

7. (amended) The method of claim [6] 1 wherein the polymerase is from *Aeromonas caviae*, *Comamonas testosteroni*, *Thiocapsia pfenigii*, *Chromatium vinosum*, *Bacillus cereus*, *Nocardia carolina*, *Nocardia salmonicolor*, *Rhodococcus ruber*, *Rhodococcus rhodocrous*, and *Rhodospirillum rubrum*.

8. (amended) The method of claim 1 wherein the [organism] transgenic *E. coli* directs metabolites to production of 3-hydroxyhexanoyl-CoA.